Athenian Trireme

THE ATHENIAN TRIREME

Prepared by the staff of the
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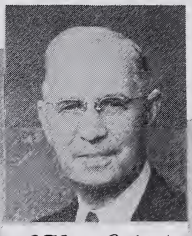

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FOREWORD

The water-color picture of the ancient trireme hanging on the west wall of the lobby of the central building of the Public Library is an enlargement of a small engraving. Ferdinand Hirt included the engraving in his HISTORISCHE BILDERTAFELN ("Historical Picture Book"), published in Breslau, Germany, in 1885. The Hirt folio was in the private collection of the late Dr. Martin F. Schick of this city and was a gift of the Schick family to the Public Library of Fort Wayne and Allen County. The picture was enlarged by a local photographer, colored and mounted by the Library's personnel, and exhibited in a frame made by the Library's cabinetmaker.

The following excerpts, reprinted from Chapter I of Arthur MacCartney Shepard's SEA POWER IN ANCIENT HISTORY, clearly describe this type of warship. Shepard's scholarly study, based on contemporary Greek sources, has been out-of-print for many years.

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The ancient Greek and Roman warships of the Mediterranean, though true prototypes of our modern dreadnaughts and battle cruisers, were little more than huge complex rowboats or galleys, abnormally lengthened for the sake of speed, and armed with a sharp beak or ram at the bow for offense. The chief means of propulsion was oars, and the chief motive power was the muscle and energy of hundreds of sturdy rowers. For though ancient war galleys were equipped with masts and sails, these were used only for voyaging with a fair wind behind and were invariably taken down and stowed away before going into battle.

Yet crude as such warcraft were, they were used by people after people in the ceaseless struggle for sea supremacy and finally were the means of a single nation establishing its sway over the whole Mediterranean. Working with such instruments, the ancient seamen essayed the elementary problems of ship-handling and maneuvers, of tactics and strategy, of discipline and administration; their solution forms the groundwork of naval science today.

The earliest peoples to have warships were probably the Egyptians and the Cretans, but the Phoenicians were the first people within the ken of written history to make an extensive use of armed sea power. Of the triumphs of their shipbuilders, however, almost no record remains, and their progress in naval science must be inferred from the contemporary progress of their imitators, the Greeks.

The twenty-oared galley was probably the earliest type of seagoing fighting ship; it was the ordinary war vessel of the Greek expeditionary force

in the ILIAD, but even in Homeric times an advance was made. By increasing the galley's length a thirty-oared ship or triëconter, and then a fifty-oared ship or penteconter were successively developed. In the effort to increase the speed and capacity of the fighting ship without adding indefinitely to its length, however, Phoenician shipwrights invented vessels with two, and later with three tiers or "banks" of rowers' benches, superimposed one above another. The bireme, or two-banked galley, though used in Phoenicia in the eighth century B. C., never became common in Greece; it was soon superseded by the superior trireme, or three-banked ship, which began to be built at Corinth about 700 B. C. and at Samos a few years later. Thenceforth the art of trireme building spread gradually among the sea peoples of Greece until, in the second decade of the fifth century, the construction of 200 triremes by Athens turned the tide of war between Europe and Asia.

For over two centuries the trireme was the standard war vessel of the Mediterranean, the line-of-battle ship of antiquity. But with the perfection of the system of superimposed banks of oars, shipwrights were tempted to build additional banks, thereby increasing still further the size and capacity, if not the speed of the vessel. In the third, second, and first centuries, B. C., great ship construction went to amazing lengths.

The trireme, when perfected, contained in itself the complete principle of superimposed banks of oars, and all later types, quadriremes, quinqueremes, and upwards, were merely expansions of that principle, or super-triremes. The trireme, moreover, was the dominant type of war-

ship during the centuries when Greek sea power held the mastery of the eastern Mediterranean.

The trireme of the fifth and fourth centuries, then the standard type of warship, was a vessel of approximately 148 feet in length, 18 feet in beam, and probably between 4 and 6 feet in draught. A vessel of this size, lightly built and designed to be drawn up frequently on shore, could not have been over 25 tons in dead weight, carrying a crew of about 200 men. The larger rates of warships were certainly somewhat longer and much heavier. Unfortunately, with one exception, exact figures of dimensions and tonnage exist only for merchant vessels. The great "show" war galley described by Athenaeus was 420 feet in length and 57 feet in beam, but of less than 8 feet in draught. A wheat-carrying vessel of the second century A. D. is described by Lucian as 180 feet in length, 46 feet in breadth, and 43 1/2 feet from her upper deck to her keel.

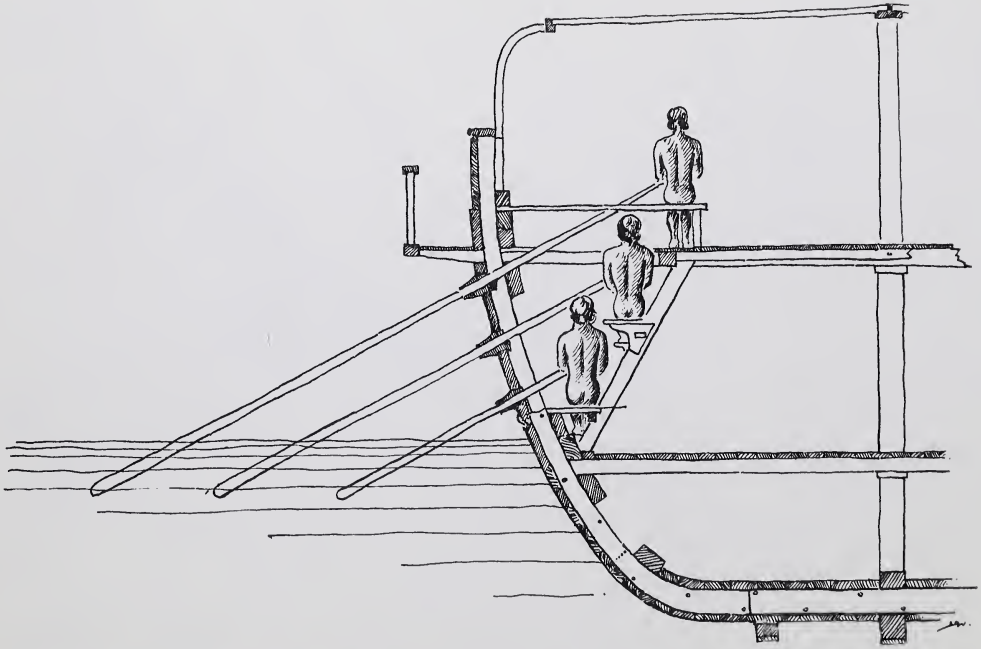
Many merchant ships had a carrying capacity of over 10,000 talents or 250 tons, and consequently a dead weight of approximately 150 tons. Elephants were constantly carried in ships back and forth across the Mediterranean, and the Vatican obelisk weighing nearly 500 tons was brought from Egypt to Rome, along with 800 tons of lentils, in a single ship. It is probable that the higher rates of warships designed for actual service, though intended to carry only crews, equipment, and a small stock of water and provisions, often exceeded 200 feet in length and 100 tons weight, or more than the size of the average English warship of the reign of Queen Elizabeth I.

THE BATTLE OF SALAMIS
AFTER A DRAWING BY WALTER CRANE.

The earliest triremes, like the penteconters, were almost wholly undecked ships; even the Athenian triremes which fought at Salamis, according to Thucydides, "were not completely decked." From this statement it is not unreasonable to infer that the triremes of Thucydides' time--the Peloponnesian War--were wholly decked over. Polybius and Livy, describing sea warfare two centuries later, speak constantly of decked and undecked vessels, and the former are evidently galleys of three banks of oars and upwards.

The ram, or chief offensive weapon of the ancient warship, consisted of a stout, thick timber projecting several feet beyond the prow; it was pointed at the end and sheathed with bronze or iron. An integral part of the vessel, it was the most important construction on the war galley, the whole forward part being arranged with a view to giving it strength and solidity at the moment of contact with the enemy. Placed at first on Greek war vessels considerably above the water line, the ram was later fixed at or beneath the surface and its action thereby rendered the deadlier.

The Athenian trireme was equipped with 170 oars, 62 being in the upper bank and 54 in each of the two lower. Each oar, which was comparatively light and short, was manned by a single rower, who sat athwart a beam or bench, whose hardness was softened by a rower's cushion. There were probably 236 oars and rowers in the quadrireme, while the Roman and Carthaginian quinqueremes in the Punic Wars had approximately 300, and later such ships were reckoned at 400 rowers. Many of the higher rates had from 500 to 1,000 rowers, and the almost fabulous forty-banked ship

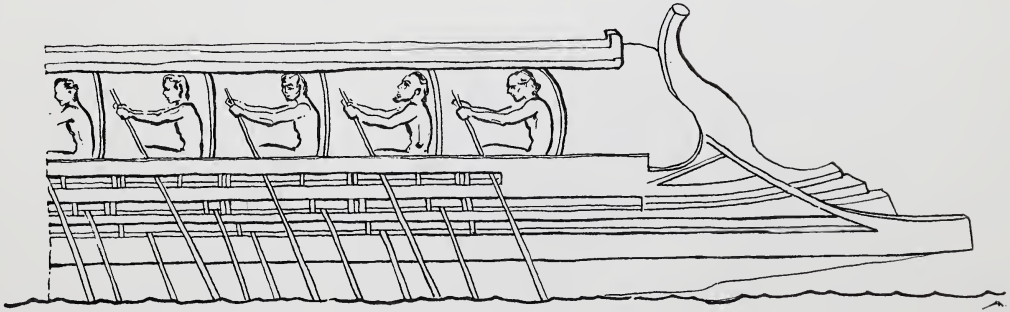


TRANSVERSAL · CUT · SHOWING · ARRANGEMENT · OF · OARS · AND · ROWERS · ON · AN · ATHENIAN · TRIREME —
FROM AN ENGRAVING.

of Ptolemy Philopator is said to have had 4,000.

Of the arrangement of oars and rowers' benches on the ancient warship little definite is known. Modern shipwrights have sought unsuccessfully to reconstruct a trireme, and much learning and ingenuity have been expended, if not wasted, on the problem. It can only be said that the oar-ports ran in tiers, one above another, along the sides of the vessel; and as these tiers were often only two feet or less apart vertically, the rowers' benches, to allow sitting space for the rowers, must have ascended upwards like great steps from the center line of the ship to the gunwales. The oars in each superior bank must have been slightly longer than those in the bank below, and some ingenious system of control must have been used to prevent interference between the oars of the different banks. It is known that the numerous oar-ports were closed by askomata or thick leathern bags, which clung close around the oars without much hindrance to their action and kept the water from entering the vessel.

Of the speed of ancient warships fairly good evidence exists. According to Xenophon, it was a long day's voyage for a trireme using oars and sails from Byzantium to Heraclea in Bithynia, a distance of 120 sea miles. The same author also states that a Milesian privateersman, carrying the tidings of the victory of Aegospotami in 405 B.C. from the Hellespont to Sparta (about 340 sea miles), reached his destination on the third day. From Thucydides we know that a trireme at forced speed made the passage from Athens to Mytilene (about 186 miles) in approximately twenty-four hours. The above reliable instances make it clear that a warship could maintain



BOW OF A TRIREME.

From a drawing by the Chevalier dal Porro, in Carloulli's "La Trière Athénienne."

an average speed of at least seven knots on a voyage of considerable length, given favorable weather conditions. For a short period of time, on smooth water, it is likely that the trireme and the quinquereme could make from thirteen to fifteen knots. There is good reason to believe, indeed, that the potential speed of the ancient fighting ship exceeded anything known in naval warfare up to the days of steam.

The Greek or the Roman war galley, to sum up, was a vessel of light construction, long and narrow, with fine sharp lines calculated to cut the water like a knife. She was designed to be beached wholly or in part almost every day and was capable, if need be, of being transported considerable distances overland on rollers. At least one instance is noted in ancient history of a fleet making its escape from the enemy in this way. Like the modern steam warship--and superior to last century's sailing man-of-war in this respect--the ancient warship possessed, under favorable weather conditions, high speed and great mobility of action. She could go where she willed, given tolerable weather, independent of wind or lack of wind. She could row circles around the sailing merchant ship; she could hold position accurately in fleets; she could spin about almost on her own axis. The fine shape of her stern enabled her to make almost the same speed reversing as advancing. Sometimes in naval battles a whole squadron would back water, keeping an unbroken front to the enemy.

Even the mobility of the oar-driven vessel, reliable as that was in fair weather, was subject to the rapid deterioration of human muscle and energy after comparatively short periods of exertion. The galley, moreover, was

so far from seaworthy that she had to run for shelter even before a moderate storm; and more warships were probably destroyed by storm in ancient times than in battle. Naval operations, in consequence, were confined for the most part to the spring and summer months; even then fleets seldom ventured far out of sight of shore, as the mariner's compass was unknown and only the crudest sort of dead reckoning was practiced. War galleys were likewise habitually beached at night, the crews sleeping on shore; all the meals, so far as practicable, were taken on land. The cargo space on ancient warships was so limited that provisions, especially water, could be carried on board sufficient for only two or three days, and constant supplies had to be drawn from land, unless the fleet was accompanied by supply ships.

From the rather meager data extant, an accurate picture of the ancient warship, as it impressed itself on the minds of the Greeks and the Romans, is scarcely realizable either by words or by the brush of the painter. It may be asserted with confidence, however, that though lacking the infinite grace of the sailing frigate of the last century or the Olympian majesty of the modern warship, the war galley of antiquity was a thing of beauty. Homer, indeed, likened the penteconter to an ocean giant or deity, and later poets commonly compared a warship under way, rhythmically dipping and raising her vast mass of oars, to a bird upon its flight.

A. M. Shepard, SEA POWER IN ANCIENT HISTORY (Boston: Little, Brown, and Company, 1924), pp. 1-13.